

Supplementary Table S1 Nominal metal nitrate ratio prepared for seven catalysts

Sample	Abbreviation	Metal nitrate ratio
NiO/MgAl _{2-x} Fe _x O ₄ $x = 0.50$	S1	Mg: Al: Fe = 2: 1.50: 0.50
NiO/MgAl _{2-x} Fe _x O ₄ $x = 0.75$	S2	Mg: Al: Fe = 2: 1.25: 0.75
NiO/MgAl _{2-x} Fe _x O ₄ $x = 1.00$	S3	Mg: Al: Fe = 2: 1.00: 1.00
NiO/MgAl _{2-x} Fe _x O ₄ $x = 1.25$	S4	Mg: Al: Fe = 2: 0.75: 1.25
NiO/MgAl _{2-x} Fe _x O ₄ $x = 1.50$	S5	Mg: Al: Fe = 2: 0.50: 1.50
NiO/MgAl _{2-x} Fe _x O ₄ $x = 1.75$	S6	Mg: Al: Fe = 2: 0.25: 1.75
NiO/MgAl _{2-x} Fe _x O ₄ $x = 2.00$	S7	Mg: Al: Fe = 2: 0: 2.00